

duration of geological time. It is curious that this obvious consideration should be so often neglected. The inheritance of acquired characters may elude observation limited to a brief space of time, but this fact says nothing definite as to its truth or untruth if we allow for the vast duration of life upon the earth.

Professor MacBride is very severe upon the doctrine of the separate existence of the "germ plasm" and the "somatoplasm" and the supposed persistence unchanged of the former. "The idea," he says, "that the germ-cells are separated from the rest early in development and possess a peculiar type of nuclear substance termed, germ plasm' in order to distinguish it from the supposedly different nuclear substance of the body-cells or, somatoplasm' can only be termed as, Weismannian nightmare.' " He holds that recent cytologic investigation has tended to show that all the nuclei of the body are alike, and that all are endowed with the reproductive capacities of the species.

The large problems raised by Professor MacBride's article cannot be dealt with, except superficially, in a short notice like the present, but the article is well worth perusal, especially by those who have too readily taken it for granted that Mendelism and Weismannism are already among the accepted axioms of biological science.

J.A.L.

Correspondence.

TO THE EDITOR OF THE EUGENICS REVIEW.

Sir,—In his singularly biased criticism of my book, *Feminism and Sex-Extinction*, your reviewer so completely misrepresents—not only the thesis on which my argument is based, but likewise my point of view and treatment, that I beg space for reply.

"The author starts," he says, "from the widely accepted view that maleness and femaleness are Mendelian characters." But on the contrary, I have submitted the totally different view that all Mendelian characters are *units*, merely, of two main Orders of Living Attribute, diametrically opposite in nature and in trend—these two Orders being, respectively, Maleness and Femaleness. For while the widely accepted view is that Maleness and Femaleness are merely a single pair of alternative units, the hypothesis I have adventured is that one side of the biological equation represents Maleness in general, the other Femaleness; and that all the alternative factors belong intrinsically to one or the other side of the equation as absolutely as the *plus* and *minus* factors belong to the opposite sides of an algebraical equation. And further, that the whole history of Evolution, or Progressive Variation, has been one of the progressive dissociation of factors of Maleness from those of Femaleness, and the progressive segregation of the Male factors from the Female factors on opposite sides of the living equation. A segregation of the characters of both Orders from those of the other, with corresponding linkage with those of their own, which has increasingly intensified the characters of both in terms of form and function; and has thus progressively intensified the products of their amphimixis in terms of the progressive evolution of species.

Given the keynotes of Tallness and Colour as Dominant characters, these identify themselves with Maleness—the male of species being larger than the females; while Colour is a differentiating feature of the fur and plumage of male creatures. The Recessive characters of Dwarfness, or lesser stature, and Whiteness, or paler colour, range themselves with Femaleness. Many other evidences support my hypothesis that the two orders of Contrasted Traits which Mendel described in peas are foreshadowings of those which have progressively revealed themselves in higher organisms as Secondary Sex-characteristics. Wherefore, I have ventured to assume that Man is a hybrid species; offspring of a male parent who bore the Male, or Dominant, traits, and of a female parent who bore the Female, or Recessive, Traits. And further that, in both sexes of this hybrid species, their own characters are prepotent, while those of the other are latent, or potential, merely.

Explaining the otherwise inexplicable phenomenon that while, *normally*, in both sexes, the qualities of the other sex are present, and, though latent, modify and fructify their own, they may develop into such abnormal prominence as to submerge and deform the sex-qualities proper to the individual.

Your reviewer charges me with assuming "without discussion that both

male and female are heterozygous and bi-sexual." Is it not logical, however, to assume that both being born of parents of opposite sex, and inevitably bearing, therefore, the characters of both sexes, both are bi-sexual?

For although it is recognised that men and women bear the traits of the opposite sex, it is ignored that the possession of such alien characters *betrays them as hybrids*. Since to bear both units of two alternative pairs is to be hybrid—and accordingly heterozygous.

The most momentous variation in the history of Life—and one bearing significantly on my argument—was the differentiation of one bi-sexual species into two species of opposite sex. Confirming Weismann's view that Mutation is Germinal, since this could only have happened by such progressive dissociations and segregations, *in increasingly intensified form*, of alternative factors of Maleness and Femaleness, respectively, in two orders of germ-cells of bi-sexual species, as culminated eventually in the segregation of such species into the two orders, male and female. Professor Punnett (*Mendelism*) considers that the "keynote" of the present-day biological position is "the discontinuity of the variations in living forms." And the explanation of this discontinuity is, surely, to be found in the dissociation and segregation of alternative factors.

Nature works by processes, not by implications. And since the alternative inferences of Maleness and Femaleness must obey the Mendelian law of Segregation, the living organisation and processes in which such inferences are Dominant, although co-ordinated and correlated with those in which they are Recessive—must be segregated from these latter. And since, according to Professor Graham Kerr (*Text-Book of Embryology*, Vol. II) the two Primary blastomeres "represent the right and left halves of the developing individual," surely my hypothesis that the inferences of the alternative factors are respectively segregated in these right and left halves of the body is less "ludicrous" than your reviewer characterises it.

Further, the zygote being bi-sexual of parentage, since segregation of alternative factors is the Mede-and-Persian law, is it not likely that all the alternative factors respectively segregated in the parental germ-cells re-segregate, after fertilization, in these two Primary blastomeres, and develop their respective inferences in the opposite sides of the body? If so, Maleness and Femaleness must inhere in the opposite halves of brain and spinal-cord and body. The vital organs too are dual; heart, lungs, kidneys, reproductive glands. And surely all the inter-linkings and the inter-operations of these dual structures, with their dual processes, are direct developments of that conjugation of gametes and chromosome-factors which occurs in the zygote.

Such is the hypothesis presented in my book in terms (and with a moral) intelligible to that general public to which it is addressed. Pending issue shortly of a more scientific presentment, I beg your readers to reserve judgment on a thesis which one of our most eminent biologists has pronounced "interesting and valuable," another foremost biologist has described himself as "greatly interested in," while two others have asked fuller information regarding my thesis, and yet another has sent me further data in support of this.

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July 20th, 1920.

Our reviewer writes as follows:—

There is no need to add anything in the way of justification to my criticism of "Feminism and Sex-Extinction." What was said in my review of the book applies equally to the above letter, as will of course be patent to well-informed readers.

S.S.B.